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JPRS: 2970

10 July 1960

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SOVIET MACHINE BUILDING

NO. 12

SELECTED TRANSLATIONS

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WASHINGTON 25, D. C.

U. S. JOINT PUBLICATIONS RESEARCH SERVICE  
205 EAST 42nd STREET, SUITE 300  
NEW YORK 17, N. Y.

JPRS: 2970

CSO: 2900-N/10

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#### Introduction

This is a serial publication containing selected translations of articles on the machine building industry in the Soviet Union. This report contains translations on subjects listed in the table of contents below.

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1. Machine Builders Have Not Fulfilled Their  
Obligations to the Chemical Industry

Following is a translation of an article written in Promyshlennno-Ekonomicheskaya Gazeta (Industrial and Economic Gazette), 18 March 1960, page 1.

...The State is investing substantial funds in the development of the chemical industry. One need only state that the current year's capital investments in that industry will increase 2.3 times compared with 1958. And it is of extreme importance to utilize these investments most effectively, to activate more rapidly the new output capacities of the chemical industry.

...Last year the production of chemical equipment had increased more than one and one-half times compared with 1958. The collectives of the "Uzbekkhimash" Uzbek Chemical Machinery Plant, Sumskiy imeni Frunze, Berdichev "Progress," and other plants had successfully completed the orders for the equipment for new large chemical plants under construction, and they have also designed new highly productive equipment and mastered its production. However, at the same time, the plan of production of chemical equipment as a whole was underfulfilled last year.

During the current year a number of machine-building enterprises are failing to fulfil the orders of chemists, and this circumstance is endangering the punctual activation of important goals of the chemical industry. Particularly unsatisfactory is the performance of the enterprises of the Astrakhanskiy Sovnarkhoz, and especially the Astrakhan Ship Repair Plant. Last year this plant had reneged on its deliveries of equipment for a number of synthetic rubber and artificial fiber plants. This years its debt has expanded instead of declined.

The workers of the "Penzkhimash" Penza Chemical Machinery Specialized Plant are coping with their tasks inefficiently. Previously, the heads of that plant and the Chief Engineer of the Machine Building Board of the Penzenskiy Sovnarkhoz Comrade Sudarkin had given assurances that they would deliver two autoclaves to the Barnaul Artificial Fiber Plant by last September or October. But this promise was not fulfilled punctually. Nor has the plant adequately coped with this task in the first two months of this year. An even worse situation exists at the "Bol'shevik" Plant in Kiev, which in the first quarter of this year has fulfilled the

orders of the chemical industry by only 70 percent.

The claims registered by chemists regarding the quality of the equipment delivered to them have been understandable. Thus, the DKM type pump valves manufactured by the Baku Instrument Building Plant do not satisfy technical requirements. As a result, at the Sumgait Synthetic Rubber Plant it became impossible to set pumps in normal operation on schedule.

All these facts attest to an irresponsible attitude toward the fulfillment of most important national-economic orders. Here the culprits are not only the enterprise managers but also the sovnarkhozes administering the given enterprises. Individual sovnarkhozes give insufficient aid to their chemical equipment building enterprises and do not as yet exercise continuous surveillance over the fulfillment of the orders placed by the large chemical industry. The Khar'kovskiy Sovnarkhoz, for instance, did not assign funds for aluminum piping to the Svesskiy Pipe Plant. And, because of this fact, that plant is now failing to meet the deadlines for its deliveries to the Lisichansk Chemical Combine.

It would not be correct to place the entire guilt for the non-observance of deadlines for delivery of equipment on the shoulders of the machine builders alone. They themselves are not infrequently misled by the metallurgists. Improper planning also exerts an adverse effect on the performance of the machine builders. This is stated in, e. g., a letter sent to the Editors by the workers of the Sumy Machine Building Plant imeni Frunze: Chief Technologist Comrade Bulgakov, Deputy Shop Manager Comrade Batrachenko, Foreman Comrade Pilipenko, Labor Brigade Leader Comrade Timchenko, and Worker Comrade Kosarev. That plant was assigned funds for procuring steel sheets from the Alchevskiy Metallurgical Plant imeni Voroshilov. However, since the Alchevskiy metallurgists still lack a pickling department, they continue to dispatch to the machine builders unpickled metal, i. e., a semifinished product instead of a finished one. The Sumy machine builders have to handle the finishing of that metal themselves in accordance with technical requirements and, for this purpose, must construct a temporary pickling department.

...This fact signifies that 700,000 to 800,000 rubles which had been assigned for financing the mechanization and automation of production now have to be expended on the construction of a temporary pickling department.

This also signifies that the rhythm of operations of the Sumy Machine Building Plant has been disrupted in the first months of the second year of the Seven-Year Plan, and

that the fulfillment of the principal orders placed with the Plant for the first quarter of the year is now endangered.

...The Pervoural'sk and Sinara tube plants have gained the notoriety of being inaccurate suppliers of carbon steel tubing and stainless steel tubing to the enterprises of the chemical machine building industry. The Zlatoust and Chelyabinsk metallurgical plants have been slow in delivering stainless metal for the manufacture of chemical equipment to the "Volgotsemtiyazhmash" Volga Cement Machinery Plant in the first quarter of this year ....

## 2. The Plan Has Been Fulfilled, But There Are No Machines (Chemical Equipment)

Following is a translation of an article written by P. Likhodiy in Promyshlennno-Ekonomicheskaya Gazeta (Industrial and Economic Gazette), 26 February 1960, page 2.

The output of chemical equipment by enterprises of the Kievskiy Economic Rayon has increased 37 percent last year. Both the plants of the chemical machine building industry and the plants with other production profiles that have been mobilized for the production of machinery and installations for the chemical industry have, on the whole, fulfilled the plan of gross output. The Kievskiy Sovnarkhoz has taken a number of measures to expand the output capacities of these plants, strengthen the design bureaus, and assure punctual supplies of complementing equipment.

In general, seen from the outside, all is well. But if one looks at the matter a little more deeply, the mood of satisfaction is dissipated.

In 1959 the enterprises of the Kievskiy Sovnarkhoz fell short of providing chemists with more than 50 varieties of machinery and equipment, including those destined for new plants. The monthly plans had been fulfilled, as a rule, in a feverish haste, precipitately.

What has caused this? Why were all the efforts of the Sovnarkhoz largely wasted? Why did the entire high-pitched labor of the plant collectives bear so little fruit?

The principal reason is improper planning. One need only state that the plan of output of chemical equipment in 1959 was altered several times and officially confirmed only as late as in January. At that time the operation of the plants was assured only to the extent of 50 percent by orders for equipment. This means that the plants lacked a complete plan of variety of output and thus could not properly prepare themselves for its fulfillment.

It is therefore not surprising that in May of last year the Fastov "Krasnyy Oktyabr" Plant, whose plan for the second quarter specified 160 different products, lacked blueprints for 28 of these products and a well-developed technology for 70 of them. And approximately the same situation existed in the "Progress" Plant in Berdichev and "Bol'shevik" in Kiev.

An even more lamentable situation arose in the enterprises especially mobilized for producing equipment for the

chemical industry, in which the plans were repeatedly modified with regard to not only variety but also volume of output.

All this has led to delays in supplying plants with materials and complementing equipment.

This year the situation has improved somewhat, but even so over a third of the plan of volume of output has again lagged behind the placement of orders. The plan-set targets for the output of individual products, e. g., injecting machines and heat-exchanger apparatuses, are considerably exceeded by the volume of the received orders for equipment. Hitherto neither the Ukrmashsbyt /Ukrainian Machinery Marketing Agency/ nor the Soyuzglavmash /All-Union Main Administration for Machinery/ have indicated how the excess orders left over from last year are to be handled. These orders have not been included in the 1960 plan, and therefore neither the materials nor the complementing products have been assigned for satisfying these orders. Besides it is not possible to void these orders, because many of them have already been started on -- to the extent of 50-80 percent -- and their fulfillment is being awaited by customers.

The situation in the Kievskiy Sovnarkhoz is also unsatisfactory with regard to the expansion of the output capacities of the chemical machine building plants, their modernization, and the construction of new shops. The Ukrainian Gosplan has for a long time failed to assign the necessary funds. The Ukgiprostanok /Ukrainian State Institute for the Design and Planning of Machine Building Plants/ (Director: Comrade Onopchenko) has been tardy in commencing the work on the related designs, after having lost much time on various compromises, and the results are as follows: hitherto the "Bol'shevik," "Progress," "Krasnyy Oktyabr," and Smelyanskiy machine building plants have not been provided with designs, although the deadlines for the issuance of technical documentation have long elapsed.

The design work itself is not being properly conducted, in our opinion. The plants lack comprehensively elaborated plans of modernization and instead they are, as a rule, provided with designs of isolated shops and departments. Moreover, the designers provide only the structural part, on the assumption that the equipment should be designed by other organizations.

But this is not the only factor interfering with expansion of output capacities. Last year a number of projects were halted because of a lack of materials, primarily metal. This situation is no better at present. The Machine Building Board of the Kievskiy Sovnarkhoz received for all

of its needs 720 tons of metal, whereas the modernization of the iron casting shop of the "Bol'shevik" Plant alone requires 750 tons. The plants of the chemical machine building industry lack sufficient equipment, in particular boring and turning lathes with a chuck diameter of 2,300-4,000 mm, radial-drilling machines with a large drill diameter, and boring machines with spindle diameters of 90 and more mm. Of the 448 equipment units needed by these plants, only 149 were received in 1959.

Much should be done by the enterprise collectives themselves to rectify the resulting situation.

Chemical machine building is in principle regarded as an individualized, custom industry. However, it also happens that a plant may produce several hundred vacuum filters, tens of rolls, or hundreds of units of heat-exchanger apparatus, at a time. Is it not possible in such cases to organize continuous-flow assembling, to create specialized departments in cold-treatment shops? Of course, it is possible. But no one wants to concern himself with it.

The Sovnarkhoz does not successfully propagandize the achievements of pace-setting enterprises and devotes little attention to the popularization of the experience of shock-workers. The casting shop of the "Progress" Plant in Berdichev, e. g., operates with the lowest percentage of rejects, casts its iron at low cost, and obtains a high output per unit production space. Such good indexes have not, unfortunately, been attained by the foundrymen of other enterprises.

The number of complaints against the chemical equipment manufactured by the plants of the Kievskiy Sovnarkhoz still continues to be high. In 1959 the complaints received regarding machinery and apparatuses totaled 31. Tens of fitters and engineers have been dispatched and have been and are remedying the revealed defects. Unfortunately, the heads of the Machine Building Board -- and particularly its director, Comrade Omel'yanenko -- attempt to ignore such phenomena. Their minds are probably set at rest by the fact of the hundred-percent fulfillment of the plan, and the other indexes are of no interest to them. And yet this will ultimately affect the fulfillment of the program. The first signs are already present: the plan of the first month of 1960 was fulfilled only 85 percent by the plants of the chemical machine building. Haste and the practice of overtime work are as widespread as before. There must be an end to this, and there is a need for concerted efforts by all the organizations having a stake in the normal operation of the plants of the chemical machine building industry.



### 3. Quality and Foolhardiness (Waste in a Chemical Equipment Plant)

Following is a translation of an article written by B. Chertkov in Leningradskaya Pravda (Leningrad Truth), 3 March 1960, page 2.

At the moment these words are being written the shops of the Plant imeni Lapse -- all the shops -- harbor mountains of rejected output, and these mountains are growing every minute. It may be true that the plant's director, Anatoliy Grigor'yevich Shirokov, is even now signing another reply asserting -- as always -- that the plant is producing good-quality output and that no claims have been submitted.

One would like to caution those who will receive that reply: do not believe it! You are being fooled in a most flagrant manner. The heads of the Plant imeni Lapse could to all intents and purposes be dubbed makers of rejects.

We will cite facts and figures. Judge them yourselves!

Have you ever seen an Autumn Mud Season village road during the autumn mud season? Your shoes sink into the slime. You stand there and are puzzled as to where to step next. Finally you just stop caring and shuffle ahead. Slush-slush-slush!

Such is the situation in the machine shops of the Plant imeni Lapse. An impassable mire. Sticky, ragged floors. Filth-covered walls. The soiling of products occurs throughout the technological process.

The plant manufactures hydraulic, steam, and gas pipe fittings for many branches of the national economy. The technical requirements for such fittings are strict. The least defect may cause leakage of oil or gasoline, increased consumption of steam or gas, or an eventual breakdown. When a valve gets clogged with dirt, it will invariably break down and will not hold up under a high pressure.

This is precisely the hazard to which valves are exposed in the flanged fittings shop. Before assembling, the body of the valve should normally be freed of dirt by a jet of air. This absolutely necessary technological operation is not carried out. The finished products are flung by assemblers onto the dirt floor, in a heap, damaging the threads. Directly afterward the products are inspected in

a testing stand and...are rejected. Rejected even when the lowest technical requirements are applied. The valves leak. Dirt clogs their stems and packing glands.

In the large slide valve shop complex and expensive fittings are assembled directly on the dirty, sticky floor. Is it so difficult to rig up even a workbench? In the electromagnetic valve shop a major part of the fittings is rejected and re-processed solely because the water used in the tests is dirty, since it issues from rusted pipes. The moment a part is made it is soiled and spoiled!

### Conveyor of Rejects

The production of the Plant imeni Lipse has a profile which makes it ideal for conducting on automatic continuous-flow lines and conveyers. Mass lots of the same types of products are repeatedly manufactured month after month. This enterprise could become a nearly totally automated plant. At any rate, there exists every condition for organizing its production on an up-to-date high technological level.

But at that plant, in the majority of shops, fittings are manufactured as small-serial production: on universal lathes with a low productivity. The assembling is done by hand.

The plant operates one shop that is mechanized and even automated. This is the junction valve shop. There, parts of small valves are machined on an automatic line and assembled on a conveyor. The automatic equipment is so soiled that its shape seems to have changed. Around the dirty conveyor work 12 persons, or, in two shifts, 24 persons. They produce so many rejects that five persons have to be occupied with the disassembling and repair of unfit devices. Products are manufactured on the conveyor and then re-processed by hand. On 27 February a lot of valves -- 253 units -- had passed through the conveyor and was sent on for assembling. Only 26 units proved to be acceptable. On the same day, another lot -- 250 units -- was produced. Only 94 proved acceptable. After the defects were repaired, 30 of the valves were re-inspected and 14 of them were again rejected. Again they will be disassembled and their parts replaced.

And here are the latest "indexes" of another shop -- the electromagnetic valve shop:

27 February: accepted -- 24; rejected -- 23.  
28 February: accepted -- 10; rejected -- 35.  
29 February: accepted -- 65; rejected -- 71.

The shop head, Sergey Sergeyevich Leonov, stated that these days are not typical, because the valves then manufactured were of a comparatively new design which was not yet completely assimilated. But as for the valves with a 70-mm diameter, their execution is excellent. Let us cite the results of the tests of these devices:

20 February: accepted -- 14; rejected -- 13.

24 February: accepted -- 64; rejected -- 54.

Enough said! Apparently, the shop head has long been unfamiliar with the concept of quality. Similar ignorance is displayed by the head of the plant's department of technical control, Sergey Sergeyevich Cherkasov. He persistently argues that all those mountains of rejects are not rejects at all once they are repaired. In this connection, the plant's bookkeeping system displays an intriguing trait: the repairs of the mass of rejects are not considered in the accounting -- these expenditures are included in production costs. Officially it is recorded that last year the losses in rejects for the plant as a whole totaled 2,336,000 rubles. This figure does not correspond with reality; it does not reflect the true situation. Foundry rejects are considered, but far from completely. The accounting considers only that which cannot be concealed.

There is no accounting of rejects, and the reasons for the rejects have not been analyzed. No one at the plant can reply where and how, during which operations and on what equipment, the rejects arise. The head of the department of technical control, Comrade Cherkasov, does not comprehend his role as the State's representative at the plant, is occupied mainly with satisfying the claims of the more insistent of the wronged customer-plants, and winks his eye at the anti-State practice instead of unmasking it: the important thing is to finish the products somehow and to ship them off.

#### How Tests Are Conducted

There is no guarantee that the devices tested in the plant's department of technical control are really acceptable. Had the customer-plants seen how that department inspects products, they would probably have canceled their orders.

The testers stand in rubber boots directly in filth and water. It is chilly and dark. The bare, filthy electric bulb provides hardly any light. In the darkness it is not possible to see the manometer or the tested product.

The rusty testing machines are so designed as to be

operated with the maximum inconvenience. When you look at these machines you involuntarily think that the plant's heads have not held a technical book in their hands for a long time. The machines cannot be termed obsolete; they are simply relics from the previous century.

The testers work on the piecework wage basis. They try to process quickly the greatest possible number of products through the testing machines. One tester remarked with bitterness:

"Our work is poor."

In general, their performance is of the "make-believe" kind. Various commissions had recommended to the plant's head that the wage system for testers be altered. But nothing was done. The foolhardiness continues.

### Reports and Reality

Nothing has been done to improve the quality of production, to put an end to rejects. And yet the signals have been increasing. Last summer the plant's heads had been directed by the Sovnarkhoz to draft a plan of measures for improving the quality of their productions. 33 measures! Except for a few very easy ones, most of the measures had remained on paper. The said plan noted, among others: "[the target is to] reduce the losses in rejects by 10 percent in the second half of 1959." Of course, no such reduction had occurred, because the rejects could not so easily vanish per se.

So another path was taken: fibbing. And, to boot, they devise theories defining rejects and claims. The plant supplies many Leningrad enterprises with castings. The quality of these castings is eloquently attested by the letters from consumer-enterprises.

The "Lenpoligrafmash" Leningrad Typographical Machinery Plant writes: "Despite our telephoned telegram we still receive cracked castings... Please take drastic measures." An automatic lathe plant writes: "Please send us a representative of yours to examine the defects in the iron castings." The "Pneumatika" Dividing Head Plant imeni Yegorov has also written such letters.

To all these letters Comrade Cherkasov has a fixed reply, based on a fixed "theory."

"A casting is not a finished product. Therefore the claims of the customer-plants cannot be recognized. If a defect is present, we will send another casting...."

What then are the claims that Comrade Cherkasov recognizes? We have his last missive. He asserts that last year only three claims were made. No claims were made in

January of this year. This is how the plant has officially reported, and these reports were used in determining its performance. But the workers of the Branch Board and the Sovnarkhoz have not checked the documents. Had they done so they would have realized that they were simply bamboozled. Comrades Cherkasov and Shirokov had failed to cite in their reports the uncontested claims by enterprises in L'vov, Gus'-Khrustal'nyy, Chita, and Zaporozh'ye, all of which were honored by the Lapse Plant.

"My hands are up, I admit my guilt," says Comrade Cherkasov, and smiles. Weeping should be in order. At any rate, one should blush and bear responsibility. Such foolhardiness does not end well.

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